

Sub. a<sup>2</sup>

I claim:

1. An injection molded dome-cap sensor and circuitry comprising;
  - an injection molded flexible dome-cap depressible against
  - pressure-sensitive variable-conductance material positioned for providing an analog variably conductive path between
  - circuit elements located on
  - a circuit board, said circuit elements at least part of
  - analog-to-digital conversion circuitry for outputting digital information representing at least three levels of electrical resistance of said material.
2. An injection molded dome-cap sensor and circuitry in accordance with claim 1 wherein said conversion circuitry is structured for reading any one of at least nine readable levels of electrical resistance of said material.
3. An injection molded dome-cap sensor and circuitry in accordance with claim 1 wherein said conversion circuitry is structured for reading any one of at least 129 readable levels of electrical resistance of said material.
4. An injection molded dome-cap sensor and circuitry according to claim 1 wherein said material is carried by said dome-cap.
5. An injection molded dome-cap sensor and circuitry according to claim 3 wherein said dome-cap is made of thermoset rubber.

6. An injection molded dome-cap sensor and circuitry according to claim 4 wherein said dome-cap is structured to produce a user discernable tactile feedback upon depression of the dome-cap.

5 7. An injection molded dome-cap sensor and circuitry comprising;

an injection molded flexible dome-cap depressible against

an active element of pressure-sensitive variable-conductance material positioned for providing a variably conductive path between

circuit elements located on

a circuit board, said circuit elements at least part of

15 circuitry structured for reading at least three levels of conductivity of said active element.

8. An injection molded dome-cap sensor and circuitry in accordance with claim 7 wherein said circuitry is structured for reading any one of at least nine readable levels of conductivity of said injection molded flexible dome-cap sensor.

9. An injection molded dome-cap sensor and circuitry in accordance with claim 7 wherein said circuitry is structured for reading any one of at least 129 readable levels of conductivity of said injection molded flexible dome-cap sensor.

10. An injection molded dome-cap sensor and circuitry according to claim 7 wherein said material is carried by said dome-cap.

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11. An injection molded dome-cap sensor and circuitry according to claim 8 wherein said dome-cap is structured to produce a user discernable tactile feedback upon depression of the dome-cap.

5        12. An injection molded dome-cap sensor and circuitry according to claim 11 wherein said dome-cap is made of thermoset rubber.

13. An elastomeric dome-cap sensor and circuitry comprising;

10        an injection molded dome-cap made of thermoset rubber and structured to be depressible against pressure-sensitive variable-conductance material carried by said dome-cap, said material positioned for providing an analog variably conductive path between

15        circuit elements located on a circuit board, said circuit elements at least part of

analog-to-digital conversion circuitry for outputting digital information representing at least 9 readable levels of electrical resistance of said material;

20        said dome-cap is structured to produce a user discernable tactile feedback upon depression of the dome-cap.

14. An improved analog sensing circuit of the type including a user manipulable variable-conductance sensor and circuitry for reading said sensor;

25        wherein the improvement comprises:  
the variable-conductance sensor is an injection molded flexible dome-cap positioned over a pressure-sensitive  
30        variable-conductance material.

15. An improved analog sensing circuit in accordance with claim 14 wherein said pressure-sensitive

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variable-conductance material is positioned within said injection molded flexible dome-cap.

16. An improved analog sensing circuit in accordance  
5 with claim 14 wherein said injection molded flexible dome-cap carries said pressure-sensitive variable-conductance material.

17. An improved analog sensing circuit in accordance  
10 with claim 14 wherein said injection molded flexible dome-cap is made primarily of polymer flexible material.

18. An improved analog sensing circuit in accordance  
15 with claim 14 wherein said injection molded dome-cap produces a user discernable tactile feedback upon depressive pressure being applied to the dome-cap.

19. An improved method for using an injection molded  
20 flexible dome-cap sensor of the type wherein an injection molded flexible dome-cap is capable of depressing an active element which is part of an electronic circuit, said injection molded flexible dome-cap depressible for transferring force into said active element, said electronic circuit structured for reading the active  
25 element as being in any one of a plurality of states;

wherein the improvement comprises the steps of:

a) depressing variably said injection molded flexible dome-cap;

b) reading said active element as being in any one of  
30 at least seventeen readable states;

c) outputting, as digital information, a read state of said active element, said outputting capable of producing as digital information at least seventeen different digital values that correspond to at least  
35 seventeen different read states of said active element.

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20. An improved method for outputting a read state of an injection molded flexible dome-cap sensor of the type wherein an active element is positioned with an injection molded flexible dome-cap which is positioned as  
5 part of an electronic circuit, said injection molded flexible dome-cap depressible for transferring force into said active element, said electronic circuit structured for reading said active element as being in any one of a plurality of states, and outputting a read state as  
10 digital information, said outputting of the read state requiring one digital bit;

wherein the improvement comprises the step:

outputting, as digital information, a read state of said active element, said outputting requiring at least  
15 four digital bits.

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